AGENDA FOR MEETING OF
THE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES

May 12-14, 1970

Tuesday, May 12

9:00 a.m. RUBELLA AND RUBELLA VACCINES

Surveillance of rubella and congenital rubella syndrome — Dr. Elias Abrutyn

Vaccine Use Since Licensure

Summary of Public Health Programs - Dr. F. Robert Freckleton

Complications and Reactions Temporally Associated With Vaccine Administration - Dr. Shelby A. Wyll

Reports of Possible Transmission of Vaccine Virus

Rhode Island Program and Survey - Dr. H. Denman Scott

Other Vaccine Field Trials - Dr. Harry M. Meyer, Jr.

10:30 BREAK

Reinfection Following Vaccination

Memphis, Tennessee - Dr. Elias Abrutyn

Hawaiian Recruits - Dr. Samuel L. Katz

Arkansas Children's Colony - Dr. Harry M. Meyer, Jr.

12:30 p.m. Lunch

2:00 p.m. Continuation of Rubella Discussion

3:00 p.m. BREAK

3:00 p.m. Simultaneous Administration of Live Virus Vaccines

Measles - Polio - Dr. Thomas C. Shope

Measles - Smallpox - Dr. William H. Foege

Status of Combined Live Virus Vaccines - Dr. Harry M. Meyer,Jr.

3:45 p.m. POLIOMYELITIS IMMUNIZATION STATUS

National Immunization Survey - Mr. William W. Dyal

Serologic Survey in Tampa - Dr. John J. Witte

4:30 p.m. Adjourn

Wednesday, May 13

9:00 a.m. INFLUENZA

Review of Surveillance in the United States 1969-70
Dr. Alan L. Brodsky

Antigenic Analysis of Recent Influenza Strains
Dr. Marion T. Coleman

Summary of Recent Vaccine Field Trials
Dr. Walter R. Dowdle

10:30 a.m. BREAK

12:30 p.m. Lunch

2:00 p.m. Working Sub-Committees for Rubella and Influenza Statements

Thursday, May 14

9:00 a.m. Review of Statements

10:30 a.m. BREAK

11:30 a.m. Discussion of dates for fall meeting

12:00 noon Adjourn

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

*Date:* March 27, 1970

*Reply to Attn of:*

*Subject:* Proposed Agenda For Meeting May 12-14, 1970

*To:* Members of The Advisory Committee on Immunization Practices

1. The following agenda has been proposed for the meeting on May 12-14, 1970. We will meet in room 207 at the National Communicable Disease Center.

Tuesday, May 12

9:00 a.m. Influenza: Review of surveillance in the United States for 1969-70, summary of recent vaccine field trials. Prospects for 1970-71.

Dr. Walter R. Dowdle and NCDC Staff

12:30 p.m. Lunch

2:00 p.m. Simultaneous Administration of Live Virus Vaccines:

Measles - Polio Dr. Thomas C. Shope

Measles - Smallpox Dr. William H. Foege

Status of Combined Live Virus Vaccines - Dr. Harry M. Meyer, Jr.

3:30 p.m. Poliomyelitis Immunization Status

National Immunization Survey - Mr. William W. Dyal

Serologic Survey in Tampa - Dr. John J. Witte

Wednesday, May 13

9:00 a.m. Rubella: Review of surveillance of rubella, congenital rubella syndrome, and vaccine usage in the United States. Current "problems" with rubella vaccine.

Dr. Elias Abrutyn and NCDC Staff and Dr. Harry M. Meyer, Jr.

12:30 p.m. Lunch

2:00 p.m. Working sub-committees for rubella and influenza statements.

Thursday, May 14

9:00 a.m. Review of Statements

11:30 a.m. Discussion of dates and agenda for fall meeting.

12 noon Adjourn

2. The "Collected Recommendations of the Advisory Committee on Immunization Practices" has proved to be a very popular and very useful. The "updating" of all of the statements was done at the spring meeting last year. This could be done at the May meeting or delayed until fall when we may have a less crowded agenda. We would like to follow the wishes of you and your colleagues on the Committee and we can decide when you come to Atlanta in May.

John J. Witte

John J. Witte, M.D.
Secretary, Advisory Committee
on Immunization Practices, NCDC

# RUBELLA VIRUS VACCINE

## INTRODUCTION

Live, attenuated rubella virus vaccine* appears to be a highly effective immunizing agent and the first suitable method of controlling rubella.

Rubella is generally a mild illness, but if the infection is acquired by a woman in the early months of pregnancy, it poses a direct hazard to the fetus. Preventing infection of the fetus is the principal objective of rubella control. This can best be achieved by eliminating the transmission of virus among children, who are the major source of infection for susceptible pregnant women. Furthermore, the live, attenuated rubella virus vaccine is safe and protective for children, but not for pregnant women because of an undetermined risk of the vaccine virus for the fetus.

## RUBELLA

Rubella is one of the common childhood exanthems. Most cases occur in school-age children particularly during the winter and spring. By early adulthood, approximately 80 to 90 percent of individuals in the United States have serological evidence of immunity.

Rubella is clinically variable, and its common features, such as post-auricular and sub-occipital lymphadenopathy and transient erythematous rash, are often overlooked or misdiagnosed.

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* Its official name is Rubella Virus Vaccine, Live.

A mild febrile illness may not be recognizable as rubella, and moreover, subclinical infection occurs, which further decreases the reliability of clinical history.

Transient polyarthralgia and arthritis may accompany or follow the illness. These occur frequently in adult females but have also been observed occasionally in adult males and in children.

By far the most important complication of rubella is the frequent occurrence of fetal abnormalities when a woman acquires rubella in the first trimester of pregnancy. Other complications of rubella such as involvement of the CNS or thrombocytopenia are rare in children, but in adults, particularly women, the illness is commonly accompained by transient polyarthritis.

RUBELLA IMMUNITY

Immunity following rubella appears to be long lasting, even after mild illness or clinically inapparent infection. Re-exposure to natural rubella is sometimes accompanied by a booster-type antibody rise without clinical disease, indicative of silent infection. To date these reinfections have not been shown to be of practical significance.

The only reliable evidence of immunity is a positive serological test. The hemagglutination-inhibition (HI) antibody determination is the test of choice for evaluating

immunity. However, because of the variation among reagents and technical procedures, results of serological tests should be accepted only from laboratories of recognized competence that regularly perform these tests.

LIVE RUBELLA VIRUS VACCINE

Live rubella virus vaccine is prepared in duck embryo, dog kidney, or rabbit kidney cell cultures. It is administered as a single subcutaneous injection. Approximately 95 percent of susceptible vaccinees develop antibodies, but titers are lower than those observed following natural rubella infection. Vaccination affords protection against clinical illness following natural exposure.

Antibody levels have declined very little during the 4-year period of observation of children who were among the first to be immunized with rubella vaccine. Long-term protection is likely, but its exact duration can be established only by continued observation.

More than 10 million children have received live rubella virus vaccine with no serious reactions.

In susceptible children, reactions have generally been mild. Rubella-like symptoms such as evanescent rash and lymphadenopathy occur occasionally. Transient arthritis and arthralgia also occurs, especially of small joints, often accompanied by tingling or numbness and most prominent at night. These features have been observed beginning 2 to 6 weeks after vaccination and resemble those seen in natural rubella.

In susceptible women, reactions are much more frequent and more likely to be severe. Not enough susceptible men have been studied to show whether they experience comparable reactions as frequently as women.

Minor differences in rates of reactions as well as immunogenicity have been reported with the available rubella vaccine preparations.

Although vaccinees may shed virus from the pharynx for several days during the period between 1 and 4 weeks after vaccination, there is little incontrovertible data establishing the transmissibility of vaccine virus. In extensive studies, few instances have been reported which are compatible with transmission of vaccine virus, based upon antibody conversion in susceptible contacts. However, the technical problems involved in establishing such communicability are formidable and in light of the sizable negative experience, further documentation is required. Although there is no sound proof, if indeed very rare instances of transmission can occur, the theoretical hazard to pregnant women is negligible because of the highly attenuated nature of the rubella strain especially by the respiratory route.

LIVE RUBELLA VIRUS VACCINE (continued)

Vaccinees exposed to rubella often have increases in antibodies. These reinfections are clinically inapparent and occur more commonly in individuals with relatively low levels of antibodies. Investigations conducted to date have indicated that these reinfections are virologically abbreviated in that viremia has not been detected and virus excretion when present appears to be diminished in amount. On the basis of present information it is thought that vaccine use will block the transmission of rubella in communities and provide significant protection against fetal disease.

## RECOMMENDATIONS FOR VACCINE USE

Live rubella virus vaccine is recommended for boys and girls between the age of 1 year and puberty. Vaccine should not be administered to infants less than 1 year old because of possible interference from persisting maternal rubella antibody.

Children in kindergarten and elementary school deserve priority for vaccination because they are commonly the major source of virus dissemination in the community. A history of rubella illness is not reliable enough to exclude children from immunization.

Vaccination of adolescent or adult males is of lower priority. However, the vaccine may be useful in preventing or controlling outbreaks of rubella in circumscribed population groups.

Pregnant women should not be given live rubella virus vaccine. It is not known to what extent infection of the fetus with attenuated virus might take place following vaccination, or whether damage to the fetus could result. Therefore, routine immunization of adolescent girls and adult women should not be undertaken because of the danger of inadvertently administering vaccine before pregnancy becomes evident.

_____Underlined words: heavy print

Women of child-bearing age may be considered for vaccination only when the possibility of pregnancy in the following 2 months is essentially nil; each case must be considered individually. This cautious approach to vaccinating post-pubertal females is indicated for two reasons: First, because of the theoretical risk of vaccination in pregnancy; and second, because significant congenital anomalies occur regularly in approximately 3 percent of all births, and their fortuitous appearance after vaccine had been given during pregnancy could lead to serious misinterpretation.

If vaccination of a woman of child-bearing age is contemplated, the following steps are indicated:

1) The woman should be tested for susceptibility to rubella by the HI test (See *Rubella Immunity*).
2) If immune, she should be assured that vaccination is unnecessary.
3) If susceptible, she may be vaccinated only if it is ascertained that she is not pregnant and if she understands that it is imperative for her to avoid becoming pregnant for the

following 2 months. (To ensure this, a medically acceptable method for pregnancy prevention should be followed. This precaution also applies to women in the immediate post-partum period.) Additionally, she should be informed of the frequent occurrence of joint involvement (see above).

There is no evidence that live rubella virus vaccine given after exposure will prevent illness. There is, however, no contraindication to vaccinating children already exposed to natural rubella. For women exposed to rubella, the concepts listed previously apply.

There is no contraindication to vaccination of individuals with pre-existing antibody.

Precautions in Using Live Rubella Virus Vaccine

Pregnancy: Live rubella virus vaccine is contraindicated. (See *Recommendations for Vaccine Use*.)

Altered Immune State: Attenuated rubella virus infection might be potentiated by severe underlying diseases, such as leukemia, lymphoma, or generalized malignancy, and when resistance has been lowered by therapy with steroids, alkylating drugs, antimetabolites, or radiation. Vaccination of such patients should be avoided.

Severe Febrile Illness: Vaccination should be postponed until the patient has recovered.

Hypersensitivity of Vaccine Components: Rubella vaccine should theoretically not be given to children clearly sensitive to the tissue substrates or other components of the vaccine. To date, there have been

no documented reports of serious hypersensitivity reactions to rubella vaccine.

Simultaneous Administration of Live Rubella Virus Vaccine and Other Live Virus Vaccines

Simultaneous administration of live rubella virus vaccine and other live virus vaccines is not recommended as a routine practice until results of controlled clinical investigations are available. Until then, it is recommended that rubella vaccination be separated by at least 1 month from administration of other live virus vaccines.

SURVEILLANCE

Careful surveillance of rubella infection is particularly important with the general use of vaccine. Emphasis should be placed upon improved diagnosis and reporting of rubella, of the congenital rubella syndrome, and of complications of the disease. Competent laboratory investigation of all infants with birth defects suspected of being due to rubella is essential. It will likewise be important to observe patterns of vaccine use and determine their effectiveness.

DRAFT -- May 13, 1970

# RECOMMENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES

## INFLUENZA, 1970-71

## INTRODUCTION

Influenza is a common respiratory illness occurring annually which periodically appears in epidemic form. Epidemic periodicity is thought to result from antigenic variations in the prevalent influenza viruses and the proportion of susceptible and immune individuals in the population. The probability of epidemic activity in any year depends upon the extent of recent influenza experience of the community and antigenic changes in the prevalent influenza viruses.

Inactivated vaccines have been variably effective and offer rather brief periods of protection. They are, however, our best available preventives of influenza. There continues to be a sound basis for recommending SELECTIVE use of influenza vaccine in chronically ill and older individuals in the population who are at greatest risk of serious complications or fatality from influenza. Prevention of influenza in the general population is not presently possible through routine vaccination.

Previous recommendations for influenza vaccine use have incorporated forecasts for influenza activity for the coming year. These forecasts may have led to the misunderstanding that vaccines should be employed only in those years when epidemics were predicted. It should be emphasized that influenza A or B activity occurs in the United States each year, although the extent of the activity and the regions affected may vary widely. Annual vaccination of the high risk groups is recommended regardless of the probability of the occurrence of influenza in any area.

## INFLUENZA VIRUS VACCINES

The Division of Biologics Standards, National Institutes of Health, regularly reviews influenza vaccine formulation, and, when indicated, recommends revisions to include contemporary antigens. Strains of influenza A examined in the United States and abroad in 1969-70 did not differ significantly from A2/Aichi/2/68. For 1970-71, the recommended adult dose of inactivated influenza vaccine will contain 400 chick cell agglutinating (CCA) units of Hong Kong strain antigen (A2/Aichi/2/68) and 300 CCA units of type B antigen (B/Mass/3/66).

Highly purified vaccines will be available from most manufacturers. The highly purified vaccines are equivalent in potency to earlier vaccines, but contain less non-viral protein and are the recommended products where available.

RECOMMENDATIONS

Annual vaccination is recommended for persons of any age with certain chronic debilitating conditions: 1) rheumatic heart disease, especially mitral stenosis; 2) such cardiovascular disorders as arteriosclerotic and hypertensive heart disease, particularly with evidence of cardiac insufficiency; 3) chronic bronchopulmonary diseases, such as asthma, chronic bronchitis, pulmonary emphysema, and advanced pulmonary tuberculosis; or 4) diabetes mellitus and certain other chronic metabolic disorders.

The indications for vaccination of all older persons are less clear. Those who may have incipient or potential chronic disease, particularly cardiovascular and bronchopulmonary diseases, should be considered candidates for annual vaccination. Candidates for influenza vaccine who have had severe local or systemic reactions to the vaccine in the past, may better tolerate the highly purified vaccine.

Some consider it reasonable to also immunize persons involved in providing essential community services. Before embarking upon such a program, physicians responsible for such groups must take into account a number of factors including: the inaccuracies of influenza prediction, the failure of the vaccine to provide complete protection, the potential incidence of side reactions, the cost of the programs, and the availability of the vaccine.

## VACCINATION SCHEDULE

The primary series consists of 2 doses administered subcutaneously, preferably 6 to 8 weeks apart. (Dose volume for adults and children is specified in the manufacturers' labeling.) Persons who regularly receive influenza vaccines and had 1 or more doses of the vaccine containing Hong Kong strain antigen in the 1968-69 or the 1969-70 seasons require only a single full dose-booster of bivalent vaccine subcutaneously. Vaccination should be scheduled for completion by mid-November.

## PRECAUTIONS

Influenza vaccine is prepared from viruses grown in embryonated eggs, and ordinarily should not be administered to persons hypersensitive to ingested egg protein.